Brit. J. vener. Dis. (1958), **34**, 194.

PENICILLIN TREATMENT FAILURES IN MALE GONORRHOEA*

BY

NEIL L. DALLAS

Department of Venereal Diseases, St. Thomas's Hospital, London

The number of patients with gonorrhoea seen in this clinic has increased each year since 1955. New male patients between December 1, 1956, and June 30, 1957 numbered 447 (303 (68 per cent.) white and 144 (32 per cent.) Negro). In this series, the standard treatment for all new patients with gonorrhoea was 300,000 units procaine penicillin. When patients showing treatment failure, with the gonococcus appearing in the urethral secretions, were questioned, a large proportion admitted further sexual intercourse and were assumed to be re-infected. In others, host factors such as alcohol and sex stimulation, appeared to play a part in the relapse.

Patients with treatment failure were re-treated according to the time interval:

(*i*) Those occurring within 2 weeks of treatment who denied further sexual intercourse were given 600,000 units procaine penicillin on the first occasion and either 1g. streptomycin or 1·2 mega units penicillin on subsequent occasions. If further intercourse was ad-admitted 300,000 units procaine penicillin was repeated.

(*ii*) Those occurring after an interval greater than 2 weeks were given a further dose of 300,000 units procaine penicillin whether or not they admitted further sexual intercourse.

Surveillance and tests of cure were carried out for a routine period of 3 months.

Results

The number of patients showing treatment failure, with the gonococcus reappearing in the urethral secretions within 3 months, was 63 (14·1 per cent.). Of these, 42 showed one failure, fourteen two failures, and seven, three failures. The failure was apparent in 33 patients within the first 2 weeks; thirteen of these admitted further sexual intercourse and were presumed to have been re-infected. The remaining twenty denied further sexual intercourse and were assumed to have relapsed.

In the remaining thirty patients, treatment failure occurred after the second week of observation; 25 of these admitted further sexual intercourse and were presumed to have been re-infected, and the remaining five denied further intercourse (Table I).

TABLE I
CLINICAL ASSESSMENT OF 63 TREATMENT FAILURES

Time of Failure	No. of Failures	Further Sexual Intercourse			Diagnosis
			No.	Per cent.	
Early ..	33	Admitted	13	20·6	Re-infection
		Denied	20	31·7	Relapse
Late ..	30	Admitted	25	39·6	Re-infection
		Denied	5	8·0	Re-infection *
Total ..	63				

* See Table II

Even so, it is reasonable to presume that they were reinfected as four out of the five were cured with only 300,000 units penicillin (Table II).

TABLE II
SURVEILLANCE OF FIVE LATE TREATMENT FAILURES

Case No.	Interval (wks)	Re-treatment	Period of Follow-up (wks)
1	10	300,000	2
2	3½	300,000	6
3	6	300,000	4
4	8	600,000	12
5	4	300,000	12

Discussion

It is of interest to compare this series with that of King, Curtis, and Nicol (1950), who studied a series of 1,447 male patients treated with 150,000 units aqueous sodium penicillin. Follow-up showed that the gonococcus reappeared in the urethral secretions

* Received for publication April 22, 1958.

in 25 (1·7 per cent.) within the first 2 weeks of observation and in a further 216 after the second week of observation. Putkonen and Rouhunkowski (1951), who treated a controlled series of female patients with graded doses of streptomycin, showed that the gonococcus nearly always reappeared within the first 2 weeks of observation in those cases which relapsed. This agrees with clinical experience in the present series. Streitmann and Krassnig (1957) treated some 2,000 female patients in hospital for a minimum period of 3 weeks with 52 (2·6 per cent.) relapses, 49 of which occurred within 19 days of treatment.

During our investigation of treatment failure, sensitivity tests were carried out in nearly all cases and in none was there any evidence to show a complete resistance of the gonococcus to penicillin. These tests, which were only qualitative, were not of much value, and further work is being carried out to show that a quantitative loss of sensitivity to penicillin does, in fact, exist in some strains of gonococci (Cradock-Watson, Shooter, and Nicol, 1958).

The unreliability of case histories, particularly in Jamaicans, presents obvious difficulties. Many patients with recurrence denied sexual contact when first interviewed but later admitted it on further questioning. The number of patients with treatment failures who admitted further sexual intercourse or who were presumed to have been re-infected was 43; possible host factors may have played a part in eight of the remaining twenty treatment failures. These factors were alcohol in five patients, sex stimulation in two, and muscular exercise in one.

In contrasting this series with that reported in 1950, it is seen that the overall failure rate is roughly similar (14·1 as against 16·7 per cent.). In the present series, however, the rate of relapse within the first 2 weeks is nearly three times higher and may well be greater still since the details of further sex contact were not obtained in the earlier series.

Summary

Clinical assessment is given of 63 cases of treatment failure in a series of 447 male gonorrhoea patients.

In twenty patients (4·4 per cent.) relapse occurred within 2 weeks of treatment.

It is believed that the reappearance of the gonococcus after 2 or 3 weeks indicates re-infection irrespective of the history obtained.

I should like to express my thanks to Dr. C. S. Nicol for permission to publish this article and for the help he has given me in writing it.

REFERENCES

Cradock-Watson, J. E., Shooter, R., and Nicol, C. S. (1958). *Brit. med. J.*, **1**, 1091.
King, A. J., Curtis, F. R., and Nicol, C. S. (1950). *Lancet*, **1**, 701.
Putkonen, T., and Rouhunkoski, S. (1951). *Acta derm.-venereol. (Stockh.)*, **31**, 391.
Streitmann, B., and Krassnigg, A. (1957). *Wien. klin. Wschr.*, **69**, 317.